DOCUMENT RESUME

ED 110 244 RC 008 692

AUTHOR	Selvik, Arne
TITLE	Level of Manufacturing Activity, Unemployment and Poverty. Center of Applied Sociology, Working Paper RID 75.2.
INSTITUTION	Wisconsin Univ., Madison. Center of Applied Sociology.
SPONS AGENCY	North Central Regional Center for Rural Development, Ames, Iowa.; Wisconsin Univ., Madison. Coll. of Agricultural and Life Sciences.
REPORT NO	RID-75.2
PUB DATE	24 Aug 75
NOTE	26p.; Paper prepared for the annual meeting of the Rural Sociological Society, San Francisco, California, August 21-24, 1975
EDRS PRICE	MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS	Correlation; *Economically Disadvantaged; Government Role; *Industry; Manpower Utilization; Policy Formation; *Relocation; *Rural Areas; Rural Development; *Unemployment

ABSTRACT

In response to the supposition that public support of regional industrial development will benefit the rural poor and unemployed, the relationship between the level of manufacturing activities and unemployment and poverty was examined. Utilizing data derived from the U.S. Census of Population (1960 and 1970) and the County Business Patterns (1959 and 1970), a national sample of 276 rural counties was examined. The variables employed were: (1) the number of county residents unemployed; (2) the percentage of families below the poverty level in 1970 (1969 income); (3) the level of manufacturing activity defined as the total number of manufacturing jobs relative to the total number of jobs in the county; (4) median age; and (5) median level of education. Data indicated that when level of manufacturing activity was defined in terms of labor force composition, there was not a significant amount of variation in unemployment or poverty levels. Moreover, it was found that weak competitors (persons 65 years of age or older, females, persons with less than high school education, and persons not employed) did not benefit from industrial relocation. It was concluded that the Federal Government should consider a group-specific regional policy, directed toward the market-relevant resources of the rural poor and unemployed, rather than toward industry and regional development commissions. (JC)

ED110244

CENTER OF APPLIED SOCIOLOGY

University of Wisconsin - Madison

LEVEL OF MANUFACTURING ACTIVITY, UNEMPLOYMENT AND POVERTY

Arne Selvik

Institute of Sociology
University of Bergen

and

Department of Rural Sociolc
University of Wisconsin-Madison

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Working Paper RID 75.2

This paper was prepared for the annual meeting of the Rural Sociological Society, San Francisco, August 21-24, 1975. Compilation and analysis of data from the National Sample of Counties was supported by the College of Agriculture and Life Sciences, University of Wisconsin-Madison and by a North Central Regional Center for Rural Development Research Grant, Gene F. Summers, Principal Investigator.

Cooperative Extension Programs
University of Wisconsin-Extension
College of Agricultural and Life Sciences

RC008692

LEVEL OF MANUFACTURING ACTIVITY, UNEMPLOYMENT AND POVERTY*

Arne Selvik

Institute of Sociology
University of Bergen

and

Department of Rural Sociology
University of Wisconsin-Madison

Prepared for the annual meeting of the Rural Sociological Society, San Fransisco, August 21-24, 1975.

* I would like to thank Archibald O. Haller, Gudmund Hernes, Kenneth I. Spenner and especially Gene F. Summers for helpful comments and suggestions on earlier drafts of this paper. This research was supported by two grants (B.31.23-09 and B.31.23-048) from The Norwegian Research Council for Science and the Humanities. Compilation and analysis of data from the National Sample of Counties was supported by the College of Agriculture and Life Sciences, University of Wisconsin-Madison and by a North Central Regional Center for Rural Development research grant, Gene F. Summers, Principal Investigator.

ABSTRACT

The essence of this paper is a questioning of the logic behind the policy of public support of regional industrial development. Based on the general notion of economic growth as a social panacea for lagging regions within an industrial nation, it is widely believed that increasing manufacturing activity brings down unemployment and poverty. As far as the nonmetropolitan part of the U.S. is concerned; however, this study shows that there is no such relationship between level of manufacturing activity and social problems like unemployment and poverty. Actually, part of the little effect that is demonstrated in the regression equations goes in the opposite direction. Data from a national sample of 276 U.S. counties show that level of manufacturing activity, defined in terms of labor force composition, does not explain a significant amount of variation in unemployment and poverty. Policy implications of these findings suggest that federal intervention in a free-enterprise economy should be directed towards the problem groups themselves (i.e. the unemployed and the poor) to improve their competitive position in the labor market, and not towards their supposedly benevolent agents (i.e. industrial corporations and regional development commissions).

INTRODUCTION

The history of western industrial development can be viewed as a constant search for an optimal spatial distribution of economic activities, a search which is obviously a prerequisite for the realization of a satisfizing rate of profit under a capitalist mode of production.

This history can roughly be divided into four main phases; two of which are parts of a concentration process: (1) The movement of labor from farms to plant towns, and (2) The concentration of factories in metropolitan areas. The two others are parts of a decentralization process: (3) Regional shifts and suburbanization of manufacturing, and (4) Nonmetropolitan industrial development. Concomitant with the two first phases has been a rapidly developing social division of labor, along with overurbanization and rising social problems.

The decentralization phases of industrial development include regional shifts (Chinitz and Vernon, 1960), suburbanization of industrial activities, and the process of nonmetropolitan industrial development (Summers et al., 1974, ch. 2). The motivational forces underlying this process can be summarized by a small number of factors: rising costs of labor, land and taxes in the cities (COSTS), migration of people to suburbs, due to improved standards of living and modern

means of transportation (MARKET/TRANSPORTATION), the release of surplus labor from mechanizing agriculture, and lagging industries (like cotton and coal mining) (LABOR) (Wheat,1973), growth of industries depending on certain types of climate, e.g. aircraft (CLIMATE) (Fuchs, 1962), and public subsidies for nonmetropolitan industrial development (SUBSIDIES).

It has been the experience of several "advanced countries" that the measures of most regional development policies have been insufficiently specific with respect to area designation, type of industry and type of technology (Duskin and Moomaw, 1967; Hansen, 1969; Smith, 1971, ch. 4). In addition to these deficiencies, economic development plans have not been sufficiently group-specific (Chinitz, 1971:23). This paper concentrates on the latter aspect of regional development policies, and argues that, contrary to public expectations, the development of manufacturing activities in nonmetropolitan areas is not likely to solve the problems of unemployment and poverty in these areas. The process of relocating manufacturing activities is merely a geographical redistribution of plants necessiated by the diseconomies of operating non-growth industries in metropolitan areas, and does not provide a social panacea for lagging rural areas. This contention is concordant with observations of a number of students in the field (Garrison, 1972; Hansen, 1971; Smith et al., 1971; Thompson, 1968; Yantis, 1972).

In its efforts to solve the dual problem of urban crisis, characterized by pollution, overcrowding, crime and discrimination; and rural backwardness, with high rates of unemployment and persistent poverty (Chinitz, 1969; Hansen, 1970), the U.S. Federal Government has during the last decade encouraged the mobility of capital from metropolitan to nonmetropol.tan areas of the country.

The Public Works and Economic Development Act of 1965, which was intended to: "help areas and regions of substantial and persistent unemployment and underemployment" (Committee on Public Works, 1965: 17), appropriated $500 million annually during the fiscal years of 1966 to 1971, and $800 million annually for the fiscal years 1971 to 1973. The Appalachian Regional Development Act of 1965; likewise, aimed to: "assist the region in meeting its special problems, [and] to promote its economic development" (Committee on Public Works, 1965: 61), has appropriated a total of $2.455,5 million for the period 1969-1978 (cf. also the Economic Opportunity Act of 1964 and the Rural Development Act of 1972).

Partly as a result of these efforts, industrialists have located a large number of new plants in nonmetropolitan areas (Dean, 1973; Patrick, 1973; Smith, 1971; Stuart, 1971). These areas experienced a 22,3 percent growth in manufacturing employment between 1960 and 1970 as compared with only 3,7 percent in metropolitan areas (Hines,

Brown and Zimmer, 1975:34). The nonmetropolitan U.S. work force in 1970 was 19,6 million, out of a total work force of about 77,3 million. Of these only 3,3 million were employed in extractive industries (Hines, Brown and Zimmer, 1975:35).

The question still remains; however, of whether this nonmetropolitan growth in manufacturing employment in fact can alleviate the social problems it is assumed to resolve (Abt Associates, 1968; Gray, 1969; Wadsworth and Conrad, 1966; Yantis, 1972). The contention of this paper is that relocation of manufacturing activities within a nation is neither a necessary nor particularly helpful measure for the solution of social problems like unemployment and poverty in a free-enterprise industrial society. Hence, the billions of dollars spent by governments to induce plant location in nonmetropolitan areas can be considered as welcomed subsidies to industrial corporations, but they do not represent a well-founded investment in a better quality of life for the economically disadvantaged in rural America (Marshall, 1973).

As long as federal subsidies and local tax breaks are contingent upon a certain geographical location of plant operations, and not upon the employment policies of manufacturing corporations, rural unemployment and poverty are not likely to be resolved. As long as: "firms are free to hire workers from outside and to 'cream' by hiring the youngest and best educated people in rural areas" (Marshall, 1972:15) unem-

ployment and poverty will remain virtually unchanged (Marshall, 1973).

One can also submit indications that rural poor residents end up worse off as a result of influx of industry and workers from metropolitan areas:

> "Their employment and income opportunities are too rarely improved as a result of the factors causing population turnaround. This situation is partly a result of human resource development and manpower program deficiencies....Moreover, the poor frequently feel the brunt of local price inflation and are denied access to recreation opportunities that they once took for granted...." (Hansen, 1973:161).

(Cf. also Summers and Clemente, 1973).

PREVIOUS RESEARCH AND THEORY

Students of social impacts upon nonmetropolitan areas from location of new manufacturing plants tend to focus mainly on economic and demographic factors (Summers et al., 1974). Some of these studies include information on unemployment and poverty, but the evidence so far is highly incomplete and unsystematic. Jordan (1967) reports a substantial increase in unemployment in an eight-county Arkansas area after a plant, which provided 750 new jobs had been located there. Abt (1968), Bryant (1969), Bender (1971), Crecinck (1970), Miernyk (1971), Petersen and Wright (1967), and Till (1973) also indicate that local labor markets operate against the indigenous poor and unemployed.

However, the limitations of variables and scope of previous research in this area are severe. Most of what has been done is case studies, monitoring a single county or a region, usually with a cross-sectional, one-shot approach (Dietz, 1972; Crecinck, 1970; Kaldor and Dahlke, 1973; for further references, see Summers et al., 1974). Most of the case studies are highly empirical, and give no theoretical guidance for the study of nonmetropolitan industrialization.

The nature of existing public intervention programs (ref. p. 3) implies a simple linear relationship between manufacturing activity on the one hand and unemployment and poverty on the other. In other words, the more manufacturing industry an area has, the less unemployment and poverty one should expect to find there. This assumption can be tested by a first-order, linear regression model of the following form:

$$Y = \beta_o + \beta_i X_i + \varepsilon \quad , (i=1,\ldots,n) \qquad (1)$$

In equation (1) Y is the dependent variable (i.e. unemployment or poverty), the X_i's represent indicators of manufacturing activity or other variables that might affect Y. The β_i's are the parameters which depict the effects of the independent variables on Y, β_o is a constant, and ε is an error term. Restating the problem in regression terms: If the indicators (X_i) cause a reduction in unemployment and poverty, the estimates of the β_i's should be large, negative and significant. If there is no such effect, they should be negligible

in magnitude and statistically insignificant. If manufacturing activity adversely affects unemployment and poverty, estimates of the β_i's should be positive and significant.

DATA

Before estimating the parameters of model (1), we shall give a description of the data used in this paper. In order to study a variety of social impacts from industrial invasion upon nonmetropolitan America, a 10 percent stratified sample was drawn from the population of nonmetropolitan counties as of 1950. This sample, consisting of 276 counties, does not represent the whole national range of manufacturing activity. Within the nonmetropolitan part of the nation; however, it includes small counties (minimum population in 1950: 1.325), where manufacturing plants are still nonexistent (minimum number of plants in 1970: 0), as well as large counties (maximum population in 1970: 494.510), which have a fair amount of plants (maximum number of plants in 1967: 335). Information on the counties has been collected from public sources for the period from 1947 to 1972. For the present study data from the Census of Population (1960 and 1970), and the County Business Patterns (1959 and 1970) have been used.

As the main dependent variable "the number of county residents unem-

ployed" (U) [1] is used, rather than the unemployment rate, for the following reason. The unemployment rate might very well decrease in an area as a result of industrial development, without affecting the number of people unemployed. In cases of heavy influx of labor from outside the local unemployment rate might be drastically reduced due to an increase in the denominator of the rate, hiding the fact that the size of the numerator remains unchanged (Walraven, 1962).

The other dependent variable is poverty (P), which is defined as "the percentage of families below the poverty level in 1970 (1969-income)". [2] In 1970 the poverty thresholds ranged from $1.487 for a "female unrelated individual 65 years old and over living on a farm" - to $6.116 for a "nonfarm family with a male head and with seven or more persons". Average poverty threshold for a "nonfarm family of four headed by a male" was $3.745 in 1970.

Level of manufacturing activity (LMA) is a concept that has technical as well as social connotations. In the present context the aspect of manufacturing activity that interests us is its ability to affect the occupational structure, or labor market composition, in nonmetropolitan counties. In accordance with the logic of economic development

1 1960 Census of Population, Vol. I, Individual State Reports, table 83, and 1970 Census of Population, Vol. I, Individual State Reports, table 121.

2 1970 Census of Population, Characteristics of the Population, table 124.

policies, then, we operationalize it (LMA) as the "total number of manufacturing jobs relative to the total number of jobs " in the county. [1]

We shall also use "median age" (MAGE) and "median level of education" (MED) in the counties to contrast their effects on unemployment and poverty with that of LMA. [2]

FINDINGS

The zero-order correlations between all the variables used in the regression equations in this section are given in table 1.

Table 1 here

The correlation between level of manufacturing activity in 1959 and unemployment in 1960 is .24. The corresponding coefficient for 1970 is .11. In 1970 the correlation between level of manufacturing and poverty was -.03. The most striking coefficient in table 1 is the one between poverty level and median education in 1970 (-.80), a relationship we shall comment more on later.

1 1959 County Business Patterns, table 3,4 and 1970 County Business Patterns, table 2.

2 1960 Census of Population, Vol. I, Individual State Reports, table 27 and 83, and 1970 Census of Population, Vol. I, Individual State Reports, table 35 and 120.

In this paper six equations of model (1) type will be estimated. First we shall explore the relationship between unemployment and manufacturing activity in 1960 and 1970. The estimates are given in equation (2) and (3):

$$\hat{U}_{60} = 325,6 + \underset{(181.9)}{\overset{(.24)}{735,6}}\ LMA_{60} \pm 661,95 \qquad R^2 = .06 \qquad (2)$$

$$\hat{U}_{70} = 407,4 + \underset{(210.8)}{\overset{(.11)}{380,3}}\ LMA_{70} \pm 735,76 \qquad R^2 = .01 \qquad (3)$$

As is clear from the exceptionally low coefficients of determination (R^2) the level of manufacturing activity explains almost nothing of the variation in unemployment levels in U.S. nonmetropolitan counties. In 1960, before the regional development plans were enacted, there was even a significant (sign. level .0001) positive effect from level of manufacturing on unemployment, i.e. the larger proportion of manufacturing jobs in the local labor force, the more unemployment. In 1970, however, this relationship was not significant (sign. level .0722) at a standard statistical level.

As the next equation (4) shows, level of manufacturing activity has even less effect on the poverty level in nonmetropolitan America:

$$\hat{P}_{70} = 18,3 - \underset{(2.8)}{\overset{(-.03)}{1,6}}\ LMA_{70} \pm 9,82 \qquad R^2 = .00 \qquad (4)$$

LMA_{70} has no significant effect (sign. level .5682) on poverty, and explains nothing of its variance. (Unfortunately, poverty data were not reported at the county level prior to 1970).

In sum, the three equations give no support to the hypothesis that a general economic effort to increase level of manufacturing activity in nonmetropolitan counties will decrease the levels of unemployment and poverty.

When discussing the lack of group-specificity in regional development programs, the age structure and the educational level of the nonmetropolitan population are often referred to as beeing crucial factors. We shall therefore include these variables in our equations to ascertain what effect they have on unemployment and poverty. The relationships between age, education, level of manufacturing activity on the one hand and unemployment in 1960 and 1970 on the other are given in equation (5) and (6):

$$\hat{U}_{60} = -532{,}7 + \underset{(177.4)}{\overset{(.26)}{795{,}8}}\ LMA_{59} + \underset{(29.4)}{\overset{(.25)}{124{,}9}}\ MED_{60} - \underset{(8.56)}{\overset{(-.08)}{12{,}0}}\ MAGE_{60} + 642{,}74 \quad (5)$$

$$R^2 = .12$$

$$\hat{U}_{70} = -537{,}7 + 436{,}6\ LMA_{70} + 164{,}3\ MED_{70} - 28{,}1\ MAGE_{70} + 692{,}13 \quad (6)$$

$$R^2 = .14$$

For 1960 and 1970 the median education contribute significantly to explain the variance in the amount of unemployment (sign. level .0000). And so does median age in 1970 (sign. level .0009), but not in 1960 (sign. level .1638). Unexpectedly; however, the direction of the effect indicates that high levels of median education go together with high levels of unemployment in both years, and that high median age correspond to low levels of unemployment in 1970. The amount of variance explained is not high in any of the equations (.12 and .14, respectively), but there is no evident interpretation of this relationship.

As indicated earlier, and as demonstrated in the next equation (7), the effect from education on poverty is very strong, and in the expected direction.

$$\hat{P}_{70} = \underset{}{89,9} \underset{(1.68)}{\overset{(-.15)}{-\ 7,2\ LMA_{70}}} \underset{(.26)}{\overset{(-.81)}{-\ 5,9\ MED_{70}}} \underset{(.07)}{\overset{(-.10)}{-\ 0,2\ MAGE_{70}}} + 5,79 \qquad (7)$$

$$R^2 = .65$$

Age also has a significant effect on poverty, and all taken together the three variables explain 65 percent of the variance in poverty.

These findings seem to suggest that a general increase in the level of manufacturing activity, as measured in this paper, is an uncertain method for reducing levels of unemployment and poverty in nonmetro-

politan U.S. counties. Education, which is another so-called "policy variable", seems to have an equivocal effect effect on the two dependent variables. High general levels of education seem to be related to high levels of unemployment, but to low levels of poverty.

IMPLICATIONS AND CONCLUSIONS

The federal policy of intervention in the processes of industrial relocation is partly based on a regional version of the national myth claiming that: "economic growth is necessary to remove poverty" (Mishan, 1971; Moore, 1965). As the results of this paper show, public investment in nonmetropolitan infrastructure and subsidized plant locations, supposed to sustain regional economic growth, is not likely to change the miserable plight of the rural poor and unemployed. And it is fairly evident why this is so.

Measures aimed at making nonmetropolitan counties attractive for plant locations have industrial corporations and county governments as their "target population" or "clients". Based on the fallacy that: "what is good for industry is good for people in the areas where manufacturing plants locate" this policy takes a certain level of individual, employment-relevant resources for granted.

But, as it has been reported by others (Bryant, 1969; Miernyk, 1971; Somers, 1958), the rural poor and unemployed are too undereducated and underskilled to benefit from such regional policies, and a substantial number of jobs are lost through "leakage" (Andrews, 1968; Bender, 1971; Lucey and Kaldor, 1969).

As Summers and Clemente have pointed out, one can, in the terminology of human ecology, discern between strong and weak competitors in a labor market. In their study of an impact area in Illinois, they define strong competitors as: "persons 35-49 years of age, males, individuals with post high school education, and white collar workers"; and weak competitors: "persons 65 years of age or older, females, persons with less than high school education and persons not employed" (Summers and Clemente, 1973:14). The results from this study suggest that people who are weak competitors do not improve their chances of becoming employed through the process of industrial relocation.

If solving the problem of unemployment and poverty in rural America is a societal desirable goal, and if federal intervention still is considered a viable option for attacking these problems, some policy implications can be drawn from this study. The assumption of an overall positive relationship between relocation of manufacturing activities and the economic well-being of local disadvantaged groups

has been shown to be unjustified. This finding calls for a group-specific regional policy that directs its attention towards the market-relevant resources of the rural poor and unemployed. This suggestion should not be taken to mean that we oppose a regional diversification of economic activities, but that such diversification in its present form does not seem to improve the social conditions of these groups.

TABLE 1

CORRELATION MATRIX FOR INDICATORS OF UNEMPLOYMENT, POVERTY, LEVEL OF MANUFACTURING ACTIVITY, EDUCATION AND AGE.

	U_{60}	U_{70}	P_{70}	LMA_{59}	LMA_{70}	MED_{60}	MED_{70}	$MAGE_{60}$	$MAGE_{70}$
U_{60}		.92	-.26	.24	.15	.21	.28	-.05	-.20
U_{70}			-.25	.20	.11	.24	.29	-.06	-.21
P_{70}				-.07	-.03	-.73	-.80	-.25	-.07
LMA_{59}					.71	-.09	-.03	-.04	-.16
LMA_{70}						-.21	-.13	.01	-.12
MED_{60}							.91	.15	.05
MED_{70}								.16	-.02
$MAGE_{60}$									.85

U_{60} : Number of residents unemployed in 1960.

U_{70} : Number of residents unemployed in 1970.

P_{70} : The percentage of families below poverty level in 1970.

LMA_{59} : Level of manufacturing activity in 1959.

LMA_{70} : Level of manufacturing activity in 1970.

MED_{60} : Median education in 1960.

MED_{70} : Median education in 1970.

$MAGE_{60}$: Median age in 1960.

$MAGE_{70}$: Median age in 1970.

Committee on Public Works

1965 The Public Works and Economic Development Act of 1965 & The Appalachian Regional Development Act of 1965. Washington, D.C.: U.S. Government Printing Office.

Crecinck, John W.

1970 Rural Industrialization: Case Study of a tissue Paper Mill in Pickens, Miss. Agricultural Economic Report No. 189, Washington, D.C.: U.S. Department of Agriculture.

Dean, Robert D.

1973 Suburbanization of industry in the U.S. Oak Ridge National Laboratory.

Dietz, John Leslie

1972 "Rural area development: analysis of the impact of new factories on agricultural towns in the Northern Great Plains". Rocky Mountain Geographical Journal, Volume 1: 19-25.

Duskin, Gerald L. and Ronald L. Moomaw

1967 Economic development centers: A review. Office of Economic Research Staff Paper, Economic Development Administration. Washington, D.C.: U.S. Department of Commerce.

Fuchs, Victor D.

1962 Changes in the location of manufacturing in the United States since 1929. New Haven: Yale University Press.

Garrison, Charles B.

1972 "The impact of new industry: an application of the economic base multiplier to small rural areas". Land Economics, Volume 47, Number 4 (November): 329-337.

REFERENCES

Abt Associates, Inc.

1968 "The industrialization of southern rural areas: a study of industry and federal assistance in small towns with recommendation for future policy". (December) Washington, D.C.: U.S. Department of Commerce, Economic Development Administration, Office of Economic Research.

Andrews, Wade H. and Ward W. Bauder

1968 "The effects of industrialization on a rural county: comparisons of social change in Monroe and Noble counties of Ohio". Department Series A.E. 407 (May) Wooster, Ohio: Ohio Agricultural Research and Development Center.

Bender. Lloyd D., Bernal Green and Rex R. Campbell

1971 "Trickle down and leakage in the war on poverty". Growth and Change, Volume 2, Number 4 (October): 34-41.

Bryant, Keith W.

1969 "Industrialization as a poverty policy: Toward a micro analysis". In Papers on Rural Poverty. API Series 37, Agricultural Policy Institute, School of Agriculture and Life Sciences, North Carolina State University.

Chinitz, Benjamin and Raymond Vernon

1960 "Changing forces in industrial location". Harvard Business Review, Volume 38, Number 1 (January-February): 126-136.

Chinitz, Benjamin

1969 "The regional problem in the U.S.A.". Chapter 4 in E.A.G. Robinson (ed.): Backward Areas in Advanced Countries. New York: St. Martin's Press.

Chinitz, Benjamin

1971 "National Policy for Regional Development". In John F. Kain and John R. Meyer: Essays in regional economics. Cambridge, Mass.: Harvard University Press.

Gray, Irwin

1969 "Employment effect of a new industry in a rural area". Monthly Labor Review, Volume 92, Number 6 (June): 26-30.

Hansen, Niles M.

1969 Growth Center Policy in the United States. Discussion Papers No. 14, Program on the Role of Growth Centers in Regional Economic Development. Lexington: University of Kentucky.

Hansen, Niles M.

1970 Rural Poverty and the Urban Crisis. A strategy for regional development. Bloomington: Indiana University Press.

Hansen, Niles M.

1971 Intermediate size cities as growth centers. New York: Praeger Publishers.

Hansen, Niles M.

1973 The future of nonmetropolitan America: Studies in the reversal of rural and small town population decline. Lexington: D.C. Heath & Co.

Hines, Fred K., David L. Brown and John M. Zimmer

1975 Social and economic characteristics of the population in metro and nonmetro counties, 1970. Agricultural Economic Report No. 272 (March). Economic Research Service. Washington, D.C.: U.S. Department of Agriculture.

Jordan, Max F.

1967 "Rural industrialization in the Ozarks: Case study of a new shirt plant at Cassville, Arkansas". Agricultural Economic Report No. 123 (November), Economic Research Service. Washington, D.C.: U.S. Department of Agriculture.

Kaldor, Don and Mike Dahlke

1973 "Industrial efforts and experiences in Iowa's rural communities". Rural Development Special Series (January). Ames. Iowa: Iowa State University, Center for Agricultural and Rural Development.

Lucey, Denis I.F. and Donald R. Kaldor

1969 Rural Industrialization. The Impact of Industrialization on two rural communities in Western Ireland. London: Geoffrey Chapman.

Marshall, Ray

1972 "Manpower policies and rural America". Manpower (April): 15-19.

Marshall, Ray

1973 Rural workers and rural labor markets. Austin, Texas: The University of Texas, Center for the study of Human Resources.

Miernyk, William H.

1971 "Local labor market effects of new plant locations". In John F. Kain and John R. Meyer: Essays in Regional Economics. Cambridge, Mass.: Harvard University Press.

Mishan, E.J.

1971 Twenty-one popular economic fallacies. Harmondsworth: Penguin Books, Ltd.

Moore, Wilbert E.

1965 The impact of industry. Englewood Cliffs: Prentice Hall.

Patrick, Charles H.

1973 Decentralization of manufacturing employment. Oak Ridge, Tennessee: Oak Ridge National Laboratory.

Petersen, John M. and Earl Wright

1967 Dynamics of small area labor supply: A case study. Industrial Research and Extension Center. Little Rock, Arkansas: University of Arkansas.

Smith, David M.

1971 Industrial location: an economic geographic analysis. New York: John Wiley & Sons, Inc.

Smith, Cortland, Thomas Hogg and M.J. Reagan

1971 "Economic develpment: panacea or perplexity for rural areas?". Rural Sociology, Volume 36 (March): 173-185.

Somers, Gerald

1958 "Labor recruitment in a depressed rural area". Monthly Labor Review, Volume 81, Number 10 (October): 1113-1120.

Stuart, Alfred W.

1971 Rural industrialization and population growth: The case of Arkansas. Civil Defence Research Project ORNL-AUD-4 (June). Oak Ridge, Tennessee: Oak Ridge National Laboratory.

Summers, Gene and Frank Clemente

1973 Rapid industrial development, competition, and relative economic status. A study in human ecology. Working Paper RID 73.10. Madison, Wisconsin: University of Wisconsin-Madison, Center of Applied Sociology.

Summers, Gene F., Sharon Evans, Frank Clemente and Elwood M. Beck, Jr.

197[illegible] Industrial invasion of non-metropolitan America: A quarter century of experience. Madison, Wisconsin: University of Wisconsin-Madison, Center of Applied Sociology.

Thompson, Wilbur R.

1968 "Internal and external factors in the development of urban economics". Pp. 43-62 in Harvey S. Perloff and Lowdon Wingo, Jr. (eds.): Issues in urban economics. Baltimore: The John Hopkins Press.

Till, Thomas E.

1973 "Extent of industrialization in southern labor markets in the 1960's". Journal of Regional Science, Volume 13 (Fall): 453-561.

adsworth, H.A. and T.M. Conrad

1966 Impact of new industry on a rural community. Research Bulletin Number 811 (July). Lafyaette, Indiana: Purdue University Agricultural Experiment Station.

Walraven, Karmelis J.

1962 Impact of new plants on local labor supply: Northwest Arkansas. Fayetteville, Arkansas: University of Arkansas, College of Business Administration, Industrial Research and Extension Center.

Wheat, Leonard F.

1973 Regional growth and industrial location: An empirical viewpoint. Lexington: D.C. Heath & Co.

Yantis, Betty L.

1972 The economic impact of industry on community services in seven municipalities in the Ozarks region of Arkansas. Unpublished Ph.D. dissertation, University of Arkansas.